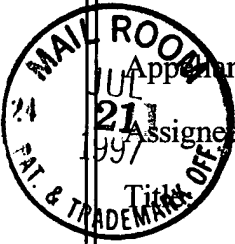


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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



Correspondence
Mail
BOX AF

Appellants: Banerjee, Biswa R.; Gladwin, Christopher; Maskatia, Arif; Soucy, Alan
Assignee: Zenith Data Systems Corporation
Title: STRUCTURE AND METHOD FOR CONTROLLING A HOST COMPUTER USING A REMOTE HAND-HELD INTERFACE DEVICE

Serial No.: 08/300,500 Filed: September 2, 1994
Examiner: J. Brier Group Art Unit: 2615
Docket No.: M-2508-1D US

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San Jose, California
July 14, 1997

BOX AF
COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D. C. 20231

APPELLANTS' BRIEF

Dear Sir:

Pursuant to 37 C.F.R. § 1.192(a), Appellants submit this Appellants' Brief in triplicate, in support of the Notice of Appeal filed in the above-referenced patent application on March 14, 1997. Appellants hereby authorize the Commissioner to deduct from Deposit Account 19-2386 the amount of \$300, being the amount specified in 37 C.F.R. § 1.17(f) for filing this Appellants' Brief. In addition, Appellants submit herewith a Petition for Extension of Time, together with an authorization for the Commissioner to deduct the requisite fees from said Deposit Account, to allow Appellants until July 14, 1997 to file this Appellants' Brief. The Commissioner is hereby further authorize to deduct from said Deposit Account any additional amount necessary for filing this Appellants' Brief, and to refund to said Deposit Account any overpayment.

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REAL PARTY IN INTEREST

The Assignee of the present Application, Zenith Data Systems Corporation is the real party in interest.

RELATED APPEALS AND INTERFERENCES

No other appeals or interferences are believed to directly affect, directly affected by, or have a bearing on the Board's decision in the pending appeal.

STATUS OF THE CLAIMS

Claims 1-13 are pending and appealed.

STATUS OF AMENDMENTS

The Examiner issued a Final Office Action on September 17, 1997. In response to this Final Office Action, Appellants submitted on February 18, 1997, a Request for Reconsideration after Final Office Action. No communication was received from the Examiner subsequent to Appellants' filing of the Request for Reconsideration. Accordingly, Appellants filed a Notice of Appeal on March 14, 1997.

SUMMARY OF INVENTION

According to one aspect of the present invention, as provided in Claim 1, the present invention provides a mobile user interface device for controlling a host computer, which includes: (1) a graphical display subsystem, as illustrated generally in Figure 1a by graphical display subsystem 113, and described in Appellants' Specification, at page 8, lines 14-20; (2) an input subsystem, including a stylus, for receiving from a user positional data representing

spatial positions of the stylus, as illustrated generally in Figure 1a by stylus input substem 110 and described in Appellants' Specification, beginning at page 8, line 24 to page 9, line 30 ; (3) a wireless communication subsystem for sending data to and receiving data from the host computer over a wireless communication link, as illustrated in Figure 1a by communication subsystem 114, and described in Appellants' Specification, at page 8, lines 12-14; and (4) means for controlling operations of mobile interface device, as illustrated by CPU 112 of Figure 1a, and described in Appellants' Specification at page 7, beginning at page 7, line 29 to page 8, line 5. The controlling means (i) causes the wireless communication link to be created; (ii) causes an application program to be run on the host computer; (iii) receives from the input subsystem the positional data, providing a response to the user in acknowledgment of the positional data, and transmitting over the wireless communication link the positional data to the application program; and (iv) receiving over the wireless communication link from said application program data representing said image, and causing the graphical display subsystem to display the image on the graphical display. These activities of the mobile user interface device are described in conjunction with Figures 2, 3a-3c at Appellants' Specification, beginning at page 17, line 16 to page 23, line 18.

Claim 2 recites the user interface device of Claim 1, further reciting that the controlling means includes (1) a central processing unit, as illustrated by CPU 112 described generally above, and shown in detail in Figure 1b, and in Appellants' Specification on page 10, lines 11-28; (2) a processor bus coupled to data and address terminals of the central processing unit, as illustrated by processor bus 150 of Figure 1b, and described in Appellants' Specification on page 10, lines 11-16; (3) a memory subsystem accessible by said central processing unit over said processor bus, as illustrated by memory subsystem 111 of Figure 1b, described in detail in Appellants' Specification, at page 11, lines 8-13; (4) a peripheral bus

coupled to the input device subsystem, the graphical display subsystem and the wireless communication subsystem, as illustrated by ISA bus 151, described in Appellants' Specification on page 10, lines 14-15; and (5) a system controller unit, coupled to the processor and peripheral busses and under the control of the central processing unit, for controlling over the peripheral bus the operations of the input device subsystem, the graphical tem, and the wireless communication subsystem, as illustrated by integrated peripheral controller 128, described in Appellants' Specification, beginning on page 11, lines 14-22.

Claim 3 recites the mobile user interface unit of Claim 2, further reciting a keyboard controller coupled to the peripheral bus for receiving keyboard input from one of: (i) a keyboard connected to the mobile user interface; and (ii) a keyboard emulation program executed by the central processing unit, wherein said keyboard emulation program mapping the positional data received in the input subsystem to selections of keys from a keyboard image displayed on the graphical display, as illustrated in Figure 1b by keyboard controller unit 125, and described in Appellants' Specification at page 13, lines 14-21.

Claim 4 recites the mobile user interface device of Claim 1, further reciting that the host computer interprets the positional data as representing digitized strokes of a handwriting, as illustrated in Figures 3a, 3b and 3c, and described in Appellants' Specification at page 6, lines 28-32.

Claim 5 recites the mobile user interface device of Claim 2, further reciting that the system controller unit includes a power conservation circuit for temporarily suspending operation of the mobile user interface device when a predetermined time period elapses without positional data received in the input subsystem, as illustrated by core logic circuit 129 in Figures 1b and 1c, and illustrated in Appellants' Specification, beginning on page 14, line 21 to page 17, line 15.

According to another aspect of the present invention, Claim 6 recites a computer system having (1) a hand-held interface device, including (i) a display device; (ii) a position input device, (iii) a wireless receiver and transmitter circuit, and (iv) control means for providing an image on the display device, as illustrated by viewer 100 of Figure 1a, and described generally in Appellants' Specification, beginning on page 7, line 28 to page 9, line 30; and (2) a host computer being coupled to (i) a wireless receiver and transmitter circuit for communicating with the hand held interface device, and (ii) means for modifying the image in accordance with the positional data. as illustrated by Appellants' Specification on beginning on page 9, line 31 to page 10, line 10.

Claim 7 recites the computer system of Claim 6, further reciting that the wireless receiver and transmitter circuit is accessed by the host computer as a shared resource on a local area network, as described in Appellants' Specification on page 10, lines 3-10.

Claim 8 recites the computer system of Claim 7, further reciting that the position input device provides a plurality of data points each indicating a position of the position input device relative to an origin, the data points being queued in a pen event buffer in the hand held interface device for transmission to the host computer over a wireless link established between the wireless receiver and transmitter circuit of the hand held interface device and the wireless receiver and transmitter circuit coupled to the host computer, as illustrated in Figure 1a, and described generally in Appellants' Specification at page 9, lines 21-30.

Claim 9 recites the computer system of Claim 6, further reciting that the host computer provides commands over the wireless link for displaying graphical images on the display device of the hand held interface device, as illustrated by Figures 3a, 3b and 3c and described in detail in Appellants' Specification. at page 18, beginning at line 29 to page 23, line 18.

Claim 10 recites the computer system of Claim 8, further reciting that the host computer has (i) buffer means for storing the data points received over said wireless link; (ii) means for processing the data points; and (iii) an event injector means for introducing the data points one by one into the means for processing, as illustrated in Figures 3a, 3b and 3c, and described in detail in Appellants' Specification, beginning on page 18, line 29 to page 23, line 18.

In accordance with another aspect of the present invention, Claim 11 recites a method for providing a mobile user interface device, including the steps of: (1) providing a graphical display, as illustrated by display subsystem 113 of Figure 1a, and described in Appellants' Specification at page 8, lines 14-20; (2) providing an input device for indicating locations on the graphical display, as illustrated by stylus input subsystem 110, described generally in Appellants' Specification on page 8, line 24 to page 9, line 30, (3) providing a wireless transceiver for communicating display information from the host computer to the mobile user interface device and for communicating the locations from the mobile user interface device to the host computer; and (4) sending data representing said locations to said host computer over said wireless link, as illustrated by communication subsystem 114 of Figure 1a, and described generally in Appellants' Specification on page 8, line 12 to page 10, line 10.

Claim 12 recites the method of Claim 11, further specifying the step of interpreting in the host computer the locations as representing digitized strokes of a handwriting, as describes in Appellants' Specification at page 6, line 28-32, and in detail beginning on page 18, line 29 to page 26, line 20.

Claim 13 recites the method of Claim 12, further reciting the step of providing a power conservation circuit for temporarily suspending operation of the mobile user interface device when a predetermined time period elapses during which the positional and selection data are

information to the portable touch screen display via the infrared link. Especially note column 7 lines 30-33 and lines 58-60 and column 9 lines 46-47 and column 10 lines 41-46 which describes a portable unit constructed of a minimum of parts with limited processing capability. Also note **In re Graves, 36 USPQ2d 1697, 1701 (CAFC December 4, 1995)** which teaches that fundamental technical information known to one of ordinary skill in the art need not be explicitly taught by the reference for the reference to show that the claimed invention is old under 35 U.S.C. § 102.

Re Claim 1:

The stylus of this claim is covered by the operator's finger in the McCain system. In McCain any stylus capable of giving an indication of touch to the touch screen may be considered a stylus.

Re claim 3: Note column 10 line 64 to column 11 line 3.

This rejection was first raised by the Examiner in the Office Action of January 23, 1996. In response, Appellants pointed out in Appellants' Amendment of June 14, 1996 that the Examiner stated neither what in the Examiner's opinion constituted "fundamental technical information" in Applicants' claims which is self-evident despite not explicitly taught in McCain, nor any support in the prior art that such fundamental technical information is known to one of ordinary skill in the art. In the Final Office of September 17, 1997, the Examiner states, in pertinent part:

... Responses to positional device locations is described in the previously cited Scientific American article. The portable touch screen display would also send the positional data over the wireless link to the host computer to be used by the program running on the host computer. The wireless transmission of positional data is the type of fundamental technical information that one of ordinary skill in the art at the time of applicants invention would know is necessary to perform their programmed functions. Furthermore one of ordinary skill in the art would know how to accomplish the transmission of the positional data from basic communication technology. A reference to show such a transmission is not necessary and is inherent in the reference itself. The transmission of data

out of a predetermined range, as illustrated in Figure 2, and described in Appellants' Specification on page 18, lines 4-20.

ISSUES

The following issues are presented before the Board of Patent Appeals and Interferences:

1. Whether the Examiner erred in rejecting Claims 1-3 and 6-11 under 35 U.S.C. § 102(e) as being anticipated by McCain et al. (U.S. Patent 5,309,351);
2. Whether the Examiner erred in rejecting Claims 4 and 12 under 35 U.S.C. § 103 as being unpatentable over McCain et al. and More et al. (U.S. Patent 5,194,852); and
3. Whether the Examiner erred in rejecting Claims 5 and 13 under 35 U.S.C. § 103 as being unpatentable over McCain et al. and Kannan et al. (U.S. Patent 5,423,045).

GROUPING OF CLAIMS

Claims 1-3 and 6-11 are separately patentable and do not stand or fall together, as explained in the Argument section below.

ARGUMENTS

1. Whether the Examiner erred in rejecting Claims 1-3 and 6-11 under 35 U.S.C. § 102(e) as being anticipated by McCain et al. (U.S. Patent 5,309,351);

In the Final Office Action of September 17, 1996, the Examiner rejected Claims 1-3 and 6-11 under 35 U.S.C. § 102(e) as being anticipated by McCain et al., stating:

This reference with an effective filing date of October 27, 1988 describes a portable touch screen display which uses an infrared link as a connection to a host computer which performs application processing and provides display

necessary to perform programmed functions is described in the previously cited Scientific American article. Thus, McCain teaches the framework of applicants invention and the previous knowledge of one of ordinary skill in the art provides the foundation and explains the inherent functions performed by McCain.

The Scientific American article which the Examiner referred above was not listed on Form PTO-892, Paper 2, December 22, 1994 or Form PTO-892, Paper 8, January 23, 1996, which are believed the only lists of the Examiner's cited references on record in the present application. Neither is the Scientific American article identified anywhere in the Examiner's various communications with specificity to allow Appellants' access to a copy. Despite a request in Appellants' Request for Reconsideration on February 18, 1997, the Examiner has not so far provided a copy or a reference to the above Scientific American article. Thus, without access to the Scientific American article, Appellants is denied a meaningful opportunity to rebutt the Examiner's arguments and to fully understand the basis of the Examiner rejection.

Nevertheless, an examination of Appellants' Claims 1-3 and 6-11 shows that these claims are patentable over McCain et al. For example, Claim 1 recites a structure for controlling a host computer by a mobile user interface device, comprising:

a graphical display subsystem, including a graphical display, for displaying an image;

an input subsystem, including a stylus, for receiving from a user positional data representing spatial positions of said stylus; and

a wireless communication subsystem for sending data to and receiving data from said host computer over a wireless communication link; and

means for controlling operations of said graphical display subsystem, said input subsystem and said wireless communication subsystem, said means for controlling (i) causing said wireless communication link to be created; (ii)

causing an application program to be run on said host computer; (iii) receiving from said input subsystem said positional data, providing a response to said user in acknowledgment of said positional data, and transmitting over said wireless communication link said positional data to said application program; and (iv) receiving over said wireless communication link from said application program data representing said image, and causing said graphical display subsystem to display said image on said graphical display. (emphasis added)

Such arrangement allows visual response to positional data be immediately provided to the user at the mobile unit, rather than after processing by the host computer over a slow wireless communication link. In contrast, McCain et al. neither disclose nor suggest that the handheld unit, rather than the host computer, provides a response to the user in acknowledgment of data received, prior to transmitting such data to the host computer.

McCain et al. teach a hand-held unit that operates like a portable terminal, which sends both commands and data to a host computer for exclusive processing by the host computer (McCain et al. at col. 6, lines 57-64). Accordingly, Claim 1 and its dependent Claims 2-3 are patentable over McCain et al.

Nevertheless, the Examiner stated in the Final Office Action of September 17, 1996:

8. The argument concerning claim 1 has noted. The rejection of this claim is maintained because at column 7 lines 30-33 the portable touch screen display is described as maintaining the menu driven interface when the host computer runs programs too large for the portable touch screen display to handle. In this mode of operation the display provides responses to the user in response to "positional data representative of a current location of the positional input device". This is the typical response that a menu based program provides to the user. An example of visual responses to positional device locations is present in windowing programs. Such programs were in existence prior to the time of applicants invention.

Appellants respectfully submit that the Examiner's interpretation of the teachings of McCain et al. is mistaken. The portion of McCain et al. relied upon by the Examiner, i.e., at

column 7, lines 30-33, does not support the Examiner's suggestion that McCain et al. teach that the mobile unit, rather than the host computer, provides a response to the operator's positional data input. The context of that portion of McCain et al. is clearly described by its heading "(8) Interactive operation between hand-held and host." (Column 6, line 56). In that context, McCain et al. teach that:

Interactive operation between the hand-held unit and a host computer occurs when the hand-held unit sends a command which initiates a cooperative program in the host computer. This program runs within the host computer but requests inputs from the hand-held unit and accepts input sent from this unit as data to be used in its program, using the wireless link. In this way the hand-held unit operates much like a portable terminal.

(McCain et al., at column 6, lines 57-64)

Turning specifically to Column 7, lines 30-33, which is specifically relied upon by the Examiner, McCain et al. state, in its entirety:

... Programs which are beyond the capability of the terminal to execute may be run, by the terminal operator, while maintaining the menu driven interface and portability. The operator may thus maintain an ...

The Examiner has taken the above out of context. In the context, i.e., col. 7, lines 4-37, McCain et al. teaches that, using a host computer, rather the hand-held unit ("terminal"), allows programs larger than can be executed in the hand-held unit be executed in the host computer, which sends screens of the menu driven user interface to the terminal to solicit input from the terminal operator, thus maintaining the desirable quality of portability. However, contrary to the Examiner's assertion, McCain et al. do not here suggest or disclose that the hand-held unit, rather than the host computer, generates the visual response to the positional data input, as recited in Claim 1.

Similarly, Claim 6 recites:

a hand-held interface device comprising (i) a display device; (ii) a position input device, said position input device receiving positional data representative of a current location of said position input device; (iii) a wireless receiver and transmitter circuit, said wireless receiver and transmitter circuit transmitting said positional data; and (iv) control means for providing an image on said display device; and

a host computer being coupled to (i) a wireless receiver and transmitter circuit for communicating with said hand held interface device, said wireless receiver and transmitter circuit of said host computer receiving said positional data; and (ii) means for modifying said image in accordance with said positional data. (emphasis added)

Claim 11 recites:

providing a graphical display;

providing an input device for indicating locations on said graphical display;

providing a wireless transceiver for communicating display information from said host computer to said mobile user interface device and for communicating said locations from said mobile user interface device to said host computer; and

sending data representing said locations to said host computer over said wireless link. (emphasis added)

Thus, Claims 6 and 11 also recite limitations similar to Claim 1, which are neither disclosed nor suggested by McCain et al. Hence, Appellants respectfully submit that Claim 6 and its dependent Claims 7-10 and Claim 11 are also patentable over McCain et al.. The lack of teachings in McCain et al. regarding the above quoted limitations of Claims 6 and 11 notwithstanding, the Examiner states in the Final Office Action of September 17, 1996:

8. The argument concerning claim 6 has been noted. The rejection of this claim is maintained because when the portable touch screen display sends the positional data over the wireless link to the host computer to be used by the program running on the host computer, a wireless receiver/transceiver at the host computer would receive the positional data. The wireless reception of the positional data by the host computer is the type

of fundamental technical information that one of ordinary skill in the art at the time of applicants invention would know is necessary for the host computer and the portable touch screen display to perform their programmed functions. Furthermore one of ordinary skill in the art would know how to accomplish the wireless reception of the positional data from basic communication technology. A reference to show such a reception not unnecessary and is inherent to the reference itself. The reception of data necessary to perform programmed functions is described in the previously cited Scientific American article.

10. The argument concerning claim 11 has been noted. The rejection of this claim is maintained for the reasons given in support of the rejection of claim 6.

In the above reasoning, the Examiner overlooked important limitations of Claims 6 and 11, which are neither disclosed nor suggested by McCain et al. Claim 6 recites a hand-held unit that provides first a visual response to an operator's positional data input, prior to receiving subsequently image modification generated by the application program running on the host computer:

a hand-held interface device comprising (i) a display device; (ii) a position input device, said position input device receiving positional data representative of a current location of said position input device; (iii) a wireless receiver and transmitter circuit, said wireless receiver and transmitter circuit transmitting said positional data; and (iv) control means for providing an image on said display device; and

a host computer being coupled to (i) a wireless receiver and transmitter circuit for communicating with said hand held interface device, said wireless receiver and transmitter circuit of said host computer receiving said positional data; and (ii) means for modifying said image in accordance with said positional data.

(emphasis added)

Thus, for the reasons similarly stated above with respect to Claim 1, Claim 6 is patentable over McCain et al. Claim 11, which recites limitations similar to those of Claim 6 recited above, is likewise patentable over McCain et al.

Further, Claims 2 recites means for controlling having the architecture:

a central processing unit;

a processor bus coupled to data and address terminals of said central processing unit;

a memory subsystem accessible by said central processing unit over said processor bus;

a peripheral bus coupled to said input device subsystem, said graphical display subsystem and said wireless communication subsystem;

a system controller unit, coupled to said processor and peripheral busses and under the control of said central processing unit, for controlling over said peripheral bus the operations of said input device subsystem, said graphical tem, and said wireless communication subsystem.

This 2-bus architecture (i.e. processor bus and peripheral bus) for a controlling means is neither disclosed nor suggested by McCain et al. Such a 2-bus architecture allows accesses to memory to be performed at the higher processor bus speed, and accesses to slower peripheral control functions to be performed at a slower peripheral bus speed, thereby achieving great operational efficiency. Neither the architecture, nor its attendant benefits, are disclosed or suggested by McCain et al. Thus, Claim 2 and dependent Claim 3 are separately patentable over McCain et al.

Claim 8 recites a positional input device and a pen event buffer in the hand-held device, which are neither disclosed nor suggested by McCain et al. These features allow for special data input functions, such as handwriting recognition, to be performed. Since neither

these features nor their attendant benefits are disclosed or suggested by McCain et al., Claim 8 and dependent Claim 10 are separately patentable over McCain et al.

For the above reasons, Appellants believe that the Examiner's rejection of Claims 1-3 and 6-11 under 35 U.S.C. § 102(e) over McCain et al. is erroneous, and accordingly request that the Board of Patent Appeals and Interferences reverses the Examiner's rejection.

2. Whether the Examiner erred in rejecting Claims 4 and 12 under 35 U.S.C. § 103 as being unpatentable over McCain et al. and More et al. (U.S. Patent 5,194,852)

In the Final Office of September 17, 1996, , the Examiner rejected Claims 4 and 12 under 35 U.S.C. § 103 as being unpatentable over McCain et al. and More et al., stating:

McCain fails to teach recognition of handwriting entered at the portable touch screen display (claims 4 and 12) and especially does not teach performing the hand recognition analysis at the host computer. McCain does teach a graphics capability in the display at column 8 line 67 to column 9 line 24 which suggests that a graphics input would be desirable in addition to the described menu selection column 9 lines 25-27. A graphics display suggests this because it is desirable to have the input resolution equal to the output resolution so it will be possible to have the input and output data correspond to the same pixel location. More describes handwriting detection in portable computer. It would have been obvious to one of ordinary skill in the art to incorporate handwriting recognition into the host computer of McCain so detailed user input may be detected by the system.

Appellants respectfully traverse the Examiner's rejection of Claims 4 and 12 under 35 U.S.C. § 103. Claim 4 depends from Claim 1 and Claim 12 depends from Claim 11. Therefore, Claims 4 and 12 are each patentable over McCain et al. and More et al., considered individually or in combination, for at least the reasons given above with respect to Claim 1.

In addition, Claim 4 and 12 each recite that the "host computer interprets said positional data as representing digitized strokes of a handwriting," thereby reciting an

architecture in which positional data acquired in a hand-held unit are sent and interpreted by a host computer over a wireless link. No such division of labor is disclosed or suggested by either McCain et al. or More et al. There is simply no motivation or suggestion for the Examiner's combination of McCain et al. and More et al.'s teachings. The Examiner's rejection of Claims 4 and 12 based on this combination is motivated by no more than impermissible hindsight reconstruction. Further, even if the teachings of McCain et al. and More et al. are combined, the combined teachings do not enable one of ordinary skill in the art to make and use Appellants Claims 4 and 12, since no teachings of how such division of labor can be effectuated are found in McCain et al. and More et al. For these reasons, Appellants respectfully submit that Claims 4 and 12 are patentable individually and in combination over the teachings of McCain et al. and More et al. Accordingly, Appellants respectfully request that the Board of Patent Appeals and Interferences reverses the Examiner's rejection of Claims 4 and 12 under 35 U.S.C. § 103.

3. Whether the Examiner erred in rejecting Claims 5 and 13 under 35 U.S.C. § 103 as being unpatentable over McCain et al. and Kannan et al. (U.S. Patent 5,423,045).

The Examiner rejected Claims 5 and 13 under 35 U.S.C. § 103 as being unpatentable over McCain et al. and in view of Kannan et al., stating:

McCain fails to teach power conservation (claims 5 and 13) in the portable touch screen display. Column 8 lines 43-51 describes the power supply used in McCains' portable touch screen display, but does not describe a power management circuit for suspending operation of the portable touch screen display under certain conditions. This, however, is taught to be old by Kannan et al. as a means to prolong the life of the battery. For this reason it would have been obvious to one of ordinary skill in the art to incorporate into the portable touch screen display of McCain a power management routine for suspending operation of the portable touch screen display under

certain conditions to prolong the life of the battery. (Office Action, pages 4-5).

Appellants respectfully submit that the Examiner's rejection of Claims 5 and 13 under 35 U.S.C. § 103 is erroneous. Claim 5 depends from Claim 1 and Claim 13 depends from Claim 1. Therefore, Claims 5 and 13 are each patentable over McCain et al. and Kannan et al. whether considered individually or in combination for at least the reasons stated above with respect to Claim 1.

In addition, Claim 13 recites:

... providing a power conservation circuit for temporarily suspending operation of said mobile user interface device when a predetermined time period elapses during which said positional and selection data are out of a predetermined range. (emphasis added)

Thus, Claim 13 recites a power conservation circuit which suspends operation of the mobile user interface according to both the elapsed time and the position of the input device relative to the handheld unit. Such an arrangement avoids lengthy restart procedures when the nearby input device, e.g., the stylus, is once again invoked, even though certain idle time may have elapsed. In many applications, where input data are provided sporadically, e.g., when a user is participating in a meeting, such a feature can be extremely useful. However, neither McCain et al. nor Kannan et al. disclose or suggest a power conservation operation that depends upon both the elapsed time and the position of input device, as recited in Claim 13, nor the attendant benefits thereof. Accordingly, Appellants respectfully submit that Claim 13 is separately patentable over McCain et al. and Kannan et al., individually and in any combination.

For these reasons, Appellants respectfully request that the Board of Patent Appeals and Interferences reverse the Examiner's rejection under 35 U.S.C. § 103 of Claims 5 and 13.

APPENDIX

1. A mobile user interface device for controlling a host computer, comprising:

a graphical display subsystem, including a graphical display, for displaying an image;

an input subsystem, including a stylus, for receiving from a user positional data representing spatial positions of said stylus; and

a wireless communication subsystem for sending data to and receiving data from said host computer over a wireless communication link; and

means for controlling operations of said graphical display subsystem, said input subsystem and said wireless communication subsystem, said means for controlling (i) causing said wireless communication link to be created; (ii) causing an application program to be run on said host computer; (iii) receiving from said input subsystem said positional data, providing a response to said user in acknowledgment of said positional data, and transmitting over said wireless communication link said positional data to said application program; and (iv) receiving over said wireless communication link from said application program data representing said image, and causing said graphical display subsystem to display said image on said graphical display.

2. A mobile user interface device as in Claim 1, wherein said means for controlling comprises:

a central processing unit;

a processor bus coupled to data and address terminals of said central processing unit;

a memory subsystem accessible by said central processing unit over said processor bus;

a peripheral bus coupled to said input device subsystem, said graphical display subsystem and said wireless communication subsystem;

a system controller unit, coupled to said processor and peripheral busses and under the control of said central processing unit, for controlling over said peripheral bus the operations of said input device subsystem, said graphical tem, and said wireless communication subsystem.

3. A mobile user interface unit as in Claim 2, further comprising a keyboard controller coupled to said peripheral bus for receiving keyboard input from one of: (i) a keyboard connected to said mobile user interface; and (ii) a keyboard emulation program executed by said central processing unit, wherein said keyboard emulation program mapping said positional data received in said input subsystem to selections of keys from a keyboard image displayed on said graphical display.

4. A mobile user interface device as in Claim 1, wherein said host computer interprets said positional data as representing digitized strokes of a handwriting.

5. A mobile user interface device as in Claim 2, wherein said system controller unit includes a power conservation circuit for temporarily suspending operation of said mobile

user interface device when a predetermined time period elapses without positional data received in said input subsystem.

6. A computer system comprising:

a hand-held interface device comprising (i) a display device; (ii) a position input device, said position input device receiving positional data representative of a current location of said position input device; (iii) a wireless receiver and transmitter circuit, said wireless receiver and transmitter circuit transmitting said positional data; and (iv) control means for providing an image on said display device; and

a host computer being coupled to (i) a wireless receiver and transmitter circuit for communicating with said hand held interface device, said wireless receiver and transmitter circuit of said host computer receiving said positional data; and (ii) means for modifying said image in accordance with said positional data.

7. A computer system as in Claim 6, wherein said wireless receiver and transmitter circuit is accessed by said host computer as a shared resource on a local area network.

8. A computer system as in Claim 7, wherein said position input device provides a plurality of data points each indicating a position of said position input device relative to an origin, said data points being queued in a pen event buffer in said hand held interface device for transmission to said host computer over a wireless link established between said wireless

receiver and transmitter circuit of said hand held interface device and said wireless receiver and transmitter circuit coupled to said host computer.

9. A computer system as in Claim 6, wherein said host computer provides commands over said wireless link for displaying graphical images on said display device of said hand held interface device.

10. A computer system as in Claim 8, wherein said host computer has (i) buffer means for storing said data points received over said wireless link; (ii) means for processing said data points; and (iii) an event injector means for introducing said data points one by one into said means for processing.

11. A method for providing a mobile user interface device, comprising the steps of:

providing a graphical display;

providing an input device for indicating locations on said graphical display;

providing a wireless transceiver for communicating display information from said host computer to said mobile user interface device and for communicating said locations from said mobile user interface device to said host computer; and

sending data representing said locations to said host computer over said wireless link.

12. A method as in Claim 11, further comprising the step of interpreting in said host computer said locations as representing digitized strokes of a handwriting.


13. A method as in Claim 12, further comprising the step of providing a power conservation circuit for temporarily suspending operation of said mobile user interface device when a predetermined time period elapses during which said positional and selection data are out of a predetermined range.

CONCLUSION

For the above reasons, Appellants believe that all pending Claims (i.e. Claims 1-13) distinguish over the prior art of record. Accordingly, Appellants respectfully request that the Board reverse the Examiner's rejections of (a) Claims 1-3 and 6-11 under 35 U.S.C. § 102 as being anticipated by McCain et al, (b) Claims 4 and 12 under 35 U.S.C. § 103 over McCain et al. and More et al., and (c) Claims 5 and 13 under 35 U.S.C. § 103 over McCain et al. and Kannan et al. If the Board has any question regarding the above, the undersigned Appellants' Attorney can be reached at 408-453-9200.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231,	
on <u>July 14 / 1997</u>	<u>7/14/97</u>
<u>Edward C. Kwok</u> Attorney for Applicant(s)	Date of Signature

Respectfully submitted,


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